

## PATENT COOPERATION TREATY

PCT



INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY  
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

REC'D 07 MAR 2005

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Applicant's or agent's file reference 5459999	<b>FOR FURTHER ACTION</b> See Form PCT/IPEA/416	
International application No. PCT/GB2004/000941	International filing date (day/month/year) 05.03.2004	Priority date (day/month/year) 31.03.2003
International Patent Classification (IPC) or national classification and IPC B62M11/16, B62K25/32		
Applicant KARBON KINETICS LIMITED et al.		
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 8 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> sent to the applicant and to the International Bureau a total of sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>		
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input checked="" type="checkbox"/> Box No. II Priority</p> <p><input checked="" type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input checked="" type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>		
Date of submission of the demand  22.10.2004	Date of completion of this report  07.03.2005	
Name and mailing address of the international preliminary examining authority:   European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized Officer  Grunfeld, M  Telephone No. +31 70 340-2216  	

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**Box No. I Basis of the report**

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1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
  - ☐ publication of the international application (under Rule 12.4)
  - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements\*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

**Description, Pages**

1-22 as originally filed

**Claims, Numbers**

1-30 as originally filed

**Claims, Pages**

23-29 as originally filed

**Drawings, Sheets**

1/13-13/13 as originally filed

**Drawings, Figures**

1-13 as originally filed

☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

\* If item 4 applies, some or all of these sheets may be marked "superseded."

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**Box No. II Priority**

1. ☒ This report has been established as if no priority had been claimed due to the failure to furnish within the prescribed time limit the requested:
- ☒ copy of the earlier application whose priority has been claimed (Rule 66.7(a)).
  - ☐ translation of the earlier application whose priority has been claimed (Rule 66.7(b)).
2. ☐ This report has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rule 64.1). Thus for the purposes of this report, the international filing date indicated above is considered to be the relevant date.
3. Additional observations, if necessary:

**Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability**

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:
- ☐ the entire international application,
  - ☒ claims Nos. 24-30
- because:
- ☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (specify):
  - ☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):
  - ☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.
  - ☒ no international search report has been established for the said claims Nos. 24-30
  - ☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:
    - the written form ☐ has not been furnished
    - ☐ does not comply with the standard
    - the computer readable form ☐ has not been furnished
    - ☐ does not comply with the standard
  - ☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-bis of the Administrative Instructions.
  - ☐ See separate sheet for further details

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**Box No. IV Lack of unity of invention**

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1. ☒ In response to the invitation to restrict or pay additional fees, the applicant has:
- ☐ restricted the claims.
  - ☐ paid additional fees.
  - ☐ paid additional fees under protest.
  - ☒ neither restricted nor paid additional fees.
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is
- ☐ complied with.
  - ☒ not complied with for the following reasons:  
**see separate sheet**
4. Consequently, this report has been established in respect of the following parts of the international application:
- ☐ all parts.
  - ☒ the parts relating to claims Nos. 1-23 .

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**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

Novelty (N)	Yes: Claims	1-23
	No: Claims	
Inventive step (IS)	Yes: Claims	11
	No: Claims	1-10,12-23
Industrial applicability (IA)	Yes: Claims	1-23
	No: Claims	

2. Citations and explanations (Rule 70.7):

**see separate sheet**

**Re Item IV.**

The separate inventions/groups of inventions are:

1-23

Bicycle, frame and single sided tubular rear arm housing the transmission

24-30

Hub with releasable mounting elements

They are not so linked as to form a single general inventive concept (Rule 13.1 PCT) for the following reasons:

Considering the closest prior art as EP1270395.

This document describes (see reference numbers of fig 6) a bicycle having front (7) and rear wheels (11) mounted to a frame (6), wherein the rear wheel comprises a hub mounted planetary gearbox (32) having an outer casing (46,46a), a spindle (38) and a driven wheel (37), and wherein the rear wheel (11) is mounted to the frame (6) at one side of the wheel only by means of a rear arm (21) having a transversely-extending mounting portion at its rear end adapted to engage a bearing (47) externally of the casing of the gearbox (32).

In addition this document describes releasable mounting elements (53) cooperable with mounting formations on a bicycle wheel for releasably mounting the wheel to the casing.

**INVENTION 1:** Claims 1-23 (Bicycle, frame and single sided tubular rear arm housing the transmission)

From a comparison of the disclosure of the prior art and the technical features of independent claims 1,12 and 19, the following technical features can be seen to make a contribution over this prior art (special technical features (STF), (Rule 13.2 PCT):

the rear arm being substantially tubular in form with an internal cavity adopted to receive a driving wheel, the driven wheel, and an endless tension element for transmitting driving force from the driving wheel to the driven wheel.

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Problem to be solved by the first invention  
how to neatly provide an enclosed pedal drive train

INVENTION 2: Claims 24-30 (Hub with releasable mounting elements)

Special technical feature with respect to the prior art:

A generally cylindrical casing for the planetary gearbox is adapted to receive an external bearing intermediate the axial extent of the casing which solves the problem of how to support the planetary gearbox unit around its outer circumference on the frame.

The above mentioned 2 separate inventions clearly do not involve a common special technical feature, in addition the 2 problems are also clearly different and cannot be solved by a common feature

In conclusion, therefore, the 2 groups of claims are not linked by common or corresponding special technical features and define 2 different inventions not linked by a single general inventive concept. The application, hence does not meet the requirements of unity of invention as defined in Rule 13(1) & (2) PCT.

**Re Item V.**

- 1 The following documents are referred to in this communication:  
D1 : DE 198 40 576 A (SRAM DE GMBH) 9 March 2000 (2000-03-09)  
D2 : EP 1 270 395 A (YAMAHA MOTOR CO LTD) 2 January 2003 (2003-01-02)

**2 INDEPENDENT CLAIMS 1,12 and 19**

- 2.1 The present application does not meet the criteria of Article 33(1) PCT, because the subject matter of independent claims 1,12 and 19 does not involve an inventive step in the sense of Article 33(3)PCT.

- 2.1.1 Document D1, which is considered to represent the most relevant state of the art to the subject matter of claim 1, discloses (the references in parenthesis applying to this document):  
a bicycle having front and rear wheels mounted to a frame, wherein the rear wheel comprises a hub-mounted planetary gearbox (14) having an outer casing, a spindle and a driven wheel (8), and wherein the rear wheel is mounted to the frame (1) at one side only by means of a rear arm (12), said rear arm being substantially tubular in form with an internal cavity to receive a driving wheel (6), and an endless tension element (7) for transmitting driving force from the driving wheel (6) to the driven wheel (8).
- 2.1.2 The subject-matter of independent claims 1 differs from the disclosure of D1 in that :  
the rear arm has a transversely extending mounting portion at its rear end adapted to engage a bearing mounted externally of the casing of the gearbox.
- 2.1.3 The problem to be solved by the present invention may therefore be regarded as how the rear arm can be arranged to support the gearbox.
- 2.1.4 In view of D2 the solution proposed in claim 1 of the present application cannot be considered as involving an inventive step (Article 33(3) PCT) for the following reasons:  
D2 shows in figure 6 (the references in parenthesis applying to this document) the rear wheel (11) mounted to the frame (6) at one side of the wheel only by means of a rear arm (21) having a transversely-extending mounting portion at its rear end adapted to engage a bearing (47) externally of the casing (46a,46) of the gearbox (32).
- Document D1 does not show how the gearbox is supported on the arm however in order to attach a gear box to the single sided arm of document D1 one could employ/adapt the arrangement of document D2.
- 2.1.5 Therefore the features disclosed in D1 and D2 would be combined by the skilled person, without exercise of any inventive skills in order to solve the problem posed. The proposed solution in independent claim 1 thus cannot be considered inventive (Article 33(3) PCT).

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- 2.1.6 Similar argumentation can be applied to independent claims 12 and 19 which also therefore cannot be considered inventive (Article 33(3) PCT).

**3 DEPENDENT CLAIMS 2-10, 13-18, 20-23**

- 3.1 In view of the other documents cited on the search report which have been given a 'Y' category, the dependent claims 2-10, 13-18, 20-23 do not appear to contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step (Article 33(3) PCT).